

1 December 1958

MEMORANDUM TO THE FILE

SUBJECT: Report of Trip to Detroit, Mich., and Mankato, Minn.

25X1A5a1 1. During the week of 9 November through 15 November 1958, I made a trip to the [REDACTED] factories for the purpose of inspecting and testing various generator sets prior to their final delivery to the Agency.

25X1A5a1 2. Testing of the five 100 kw. units that were procured from the [REDACTED] was initiated on the morning of 10 November. Four units were tested and accepted by 12 November, but the fifth unit would not respond electrically as specified. When inspection indicated that its voltage regulating circuit was at fault, it was decided that this unit should be serviced by a qualified representative of the [REDACTED] 25X1A5a1 [REDACTED] Arrangements were thereupon made to send a qualified service man to Detroit within three days to adjust the difficulty.

3. In view of the fact that four of the generator sets were completely acceptable and the fifth one mechanically satisfactory, I agreed to accept all of the units then, at the time of the inspection. This agreement was made of course with the assurance by [REDACTED] 25X1A5a1 [REDACTED] that the electrical trouble would be corrected before they shipped the fifth unit.

4. Since my return I have learned that the fifth generator set has been repaired and tested satisfactorily. The entire shipment of the five generators and their associated gear and spare parts left the Detroit factory for the West Coast on 26 November 1958.

25X1A5a1 5. I departed from Detroit on 12 November and arrived at the [REDACTED] on 13 November 1958.

25X1A5a1 6. The prototype model of the 5 kw. generator set that the [REDACTED] 25X1A5a1 [REDACTED] had proposed and built for us was inspected and tested. The modifications that we had requested had all been incorporated in the unit and tested satisfactorily.

7. This new generator unit, which will be known as [REDACTED] 25X1A5a1 Model 5HFW-4-3 is a very versatile generator set. Special provisions

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have been made so that a variety of field applications can be obtained by merely making a few adjustments or changing a minor part. The units when crated will contain an extra flexible exhaust extension and a most efficient automotive type muffler for silencing. Also, a 3-way valve has been installed which enables the selection of either a gravity fuel feed or an underground tank. A special fuel pump with a lift of 15 ft. can be utilized if so desired. Another excellent feature is the arrangement of the electrical output connections which offers the use of a variety of separately fused circuits. In addition to these features the unit is skid mounted and completely weatherproof.

8. While at the factory it was learned that the [REDACTED] has developed a new type of generator that is completely SPARK FREE, an innovation which eliminates all radio interference that in the past has been caused by arcing brushes. In designing this generator they have completely eliminated the wearing parts such as the commutator, slip rings, brush holder assemblies and the brushes. There is no possibility of sparking with these alternators. All components which might produce electric arcing has been replaced with rectifier systems, resulting in a continuous uninterrupted current flow from the exciter to the AC output stator lead wires. The exciter of the brushless alternator consists of a revolving armature type AC generator. The 3-phase output of this exciter is fed through a rotating silicon rectifier assembly mounted on the alternator Shaft, the DC output of this assembly being then fed into the revolving alternator field. The stationary exciter field poles are fed from the output of the alternator through a stationary rectifier assembly.

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9. All in all, this type of alternator appears to be the solution to many radio interference problems that have been constantly occurring in the field. With this in mind I approached the [REDACTED] with the idea that they build up a unit to our specifications, following the lines of the 5 kw. unit they are now perfecting for us. This they agreed to do, if we desired, on a cost-plus basis. Such an arrangement would offer an excellent opportunity for the Agency to obtain a unit for evaluation under operating conditions.

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10. Since one of the most consistent complaints from the field has been that of radio interference caused by generator units, I wish to emphasize that I feel that here at last is a possible solution to this hindrance.

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11. I recommend that a generator set with this new brushless type of alternator be procured and a thorough evaluation be conducted.

12. I returned to Washington, D. C. on 18 November 1958.

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Distribution:

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Origination: 25X1A9a

OC-E/SEB/FE  mbc/4418